



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/730,017	12/09/2003	Masayoshi Iwase	10517/210	2758
23838	7590	10/05/2005	EXAMINER	
KENYON & KENYON 1500 K STREET NW SUITE 700 WASHINGTON, DC 20005			MERCADO, JULIAN A	
			ART UNIT	PAPER NUMBER
			1745	

DATE MAILED: 10/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/730,017

Applicant(s)

IWASE ET AL.

Examiner

Julian Mercado

Art Unit

1745

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 12/03, 7/04, 2/05

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Claim Objections

Claims 1, 2, 5, 6, 13, 15-17 and 19 is objected to because of the following informalities:

- a. In claim 1 at line 4, it is suggested to change “which the joint body which holds the joint body” to --which holds the joint body--.
- b. In claims 2, 6, 13 and 17 at line 1 of each claim, it is suggested to change “includes supplying gas” to --a supplied gas--, or alternatively, --a gas--.
- c. In claim 5 at line 1, it is suggested to change “comprising” to --comprises--.
- d. In claims 15 and 16 at line 1 of each claim, it is suggested to change “wherein number” to --wherein the number--.
- e. In claim 19 at lines 5-6, it is suggested to change “is formed is formed” to --is formed--.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 4 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Art Unit: 1745

Claim 4 recites the limitation "the manifold" in line 1. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-18 are rejected under 35 U.S.C. 102(e) as being anticipated by Kurita et al. (U.S. Pat. 5,998,055).

Kurita teaches a fuel cell comprising a joint body having an electrolyte [1] interposed between a pair of electrodes [2] and a separator [3] holding the joint body insofar as it is disclosed to be pressingly contacting the electrodes. See col. 4 lines 48-51. A plurality of projections [a] project from the separator bottom. A plurality of rib portions [b] divide the projections into a plurality of regions. See Figures 1 and 3 and col. 6 line 1 et seq.

The fluid includes a supplied gas and coolant. See col. 4 line 57 et seq. and col. 7 line 9-10.

In view of Figure 3, a turning section is taken as the section of projections mutually shared between the fluid passage region defined by ribs [21A] and by ribs [21B]. This turning section, as seen in the upper rightmost quadrant of Figure 3, is defined by a plurality of rib pieces (labeled in this Figure as reference character [D]) The distal end of the [N-1] fluid passage

Art Unit: 1745

region turns into the proximal end of the [N-2] fluid passage region. Kurita teaches the as found in column 6 lines 25-31:

25 By thus decreasing the number of passages of the inter-
mediate channel part 21 toward the downstream, the flow
rate of the gas flowing into the outlet-side channel part 22B
can be increased in comparison with that in the case where
the number of passages are constant as in the first preferred
30 embodiment, and water dischargeability is enhanced without
increasing the volume of supply gas or pressure loss.

Thus, the turning section near the proximal end of the [N-2] section is appreciated to be narrower in width than the width of the previous fluid passage region. Further, it naturally follows that each succeeding fluid passage region is of a different width, and that the width of the first region near the inlet portion [22A] is wider than the width near the outlet portion [22B].

As shown in Figure 3, the number of projections in the [N-1] region is shown at nine, while the number of projections in the [N-2] region is shown at seven, etc. Thus, the number of projections arranged in each region is different and that the number near the inlet portion [22A] is greater than that near the outlet portion [22B]. (applies specifically to claims 15 and 16)

At least a portion of the manifold or separator passage is bent, as shown by the area occupied by rib [20]. See Figure 5 and col. 6 lines 42-44.

As shown in Figure 3, the number of projections in the [N-1] region is shown at nine, while the number of projections in the [N-2] region is shown at seven, etc. Thus, the number of projections arranged in each region is different and that the number near the inlet portion [22A] is greater than that near the outlet portion [22B].

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 19 is rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Nakanishi et al. (U.S. Pat. 4,910,100).

Nakanishi teaches a fuel cell comprising a joint body [13] having an electrolyte member interposed between a pair of electrodes. A gas passage of a porous body has linear grooves [8A] bent in a semicircular shape and extending along the inside of the gas passage. See Figure 6(A). As to the size of the curved portion of the bent linear grooves, Nakanishi teaches the following in col. 9 line 4-14:

FIGS. 6(A) and 6(B) show a cell stack adopting a modified design of guide vanes 8A. FIG. 6(A) is a plan view and FIG. 3(A) is a cross section as viewed in the direction indicated by arrow 6A—6A in FIG. 6(A). The guide vanes 8A are formed as spiral coils. The pitch between adjacent turns of the spiral is selected at an optimum value which depends upon the diameter of the cell stack. The major advantage of this design is that the reactant gases can be admitted uniformly into the single cells 13 and that the discharged gases can be collected in one place.

Thus, the size or “pitch” of the curved portions is varied and is “selected at an optimum value”. While Nakanishi does not explicitly teach this size to vary in accordance with a variation in the total amount of gas produced by the joint body, the skilled artisan would find obvious that the diameter of the cell stack would inherently affect the amount of gas produced, absent of a showing by applicant that the claimed invention distinguishes over the reference. *In re Best*, 195

Art Unit: 1745

USPQ at 433, footnote 4 (CCPA 1977) and *In re Spada*, 15 USPQ 2d 1655 (Fed. Cir. 1990) A larger cell stack, for example, would result in greater discharge gas (and reactant water) produced.

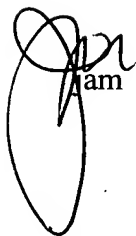
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julian Mercado whose telephone number is (571) 272-1289. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick J. Ryan, can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.



am



PATRICK JOSEPH RYAN
SUPERVISORY PATENT EXAMINER